Claims

We claim:

1. A method for inducing an immune response to a feline immunodeficiency virus (FIV) in a human or an animal that is susceptible to infection by FIV, said method comprising administering an effective amount of an FIV immunogen to said human or animal to induce said immune response.

2. The method according to claim 1, wherein said FIV immunogen induces a humoral immune response.

3. The method according to claim 1, wherein said FIV immunogen induces a cellular immune response.

4. The method according to claim 1, wherein said FIV immunogen induces an immune response against one or more subtypes of FIV.

5. The method according to claim 1, wherein said FIV immunogen is selected from the group consisting of synthetic FIV peptide, natural or recombinant FIV protein or a fragment thereof, polynucleotide comprising a sequence that encodes an FIV protein or fragment thereof, polynucleotide comprising a sequence that encodes an FIV protein or a fragment thereof and an HIV protein or a fragment thereof, inactivated or attenuated whole FIV viral isolate, FIV viral fragment, inactivated cells infected with FIV, and composition comprising FIV and HIV proteins or fragments thereof.

6. The method according to claim 5, wherein said FIV immunogen comprises an epitope of an FIV and HIV protein that is evolutionarily conserved between the viruses.

7. The method according to claim 6, wherein said protein is selected from the group consisting of core gag protein and envelope protein.

8. A method for inducing an immune response to a human immunodeficiency virus (HIV) in a human, said method comprising administering an effective amount of an FIV immunogen to said human to induce said immune response.

9. The method according to claim 8, wherein said FIV immunogen induces a humoral immune response.

10. The method according to claim 8, wherein said FIV immunogen induces a cellular immune response.

11. The method according to claim 8, wherein said FIV immunogen induces an immune response against one or more subtypes of FIV.

12. The method according to claim 8, wherein said FIV immunogen is selected from the group consisting of synthetic FIV peptide, natural or recombinant FIV protein or a fragment thereof, polynucleotide comprising a sequence that encodes an FIV protein or fragment thereof, polynucleotide comprising a sequence that encodes an FIV protein or a fragment thereof and an HIV protein or a fragment thereof, inactivated or attenuated whole FIV viral isolate, FIV viral fragment, inactivated cells infected with FIV, and composition comprising FIV and HIV proteins or fragments thereof.

13. The method according to claim 12, wherein said FIV immunogen comprises an epitope of an FIV and HIV protein that is evolutionarily conserved between the viruses.

14. The method according to claim 13, wherein said protein is selected from the group consisting of core gag protein and envelope protein.

15. A method for treating or preventing feline immunodeficiency virus (FIV) infection in a human or an animal that is susceptible to infection by FIV, said method comprising administering an FIV immunogen to said human or animal.

16. The method according to claim 15, wherein said FIV immunogen induces an immune response against one or more subtypes of FIV.

17. The method according to claim 15, wherein said FIV immunogen induces a humoral immune response.

18. The method according to claim 15, wherein said FIV immunogen induces a cellular immune response.

19. The method according to claim 15, wherein said FIV immunogen is selected from the group consisting of synthetic FIV peptide, natural or recombinant FIV protein or a fragment thereof, polynucleotide comprising a sequence that encodes an FIV protein or fragment thereof, polynucleotide comprising a sequence that encodes an FIV protein or a fragment thereof and an HIV protein or a fragment thereof, inactivated or attenuated whole FIV viral isolate, FIV viral fragment, inactivated cells infected with FIV, a composition comprising FIV and HIV proteins or fragments thereof, an antibody that cross-reacts with an FIV and an HIV protein or antigen, and an antibody composition that comprises one or more antibody that is specific to an FIV protein or antigen and one or more antibody that is specific to an HIV protein or antigen.

20. The method according to claim 19, wherein said FIV immunogen comprises an epitope of an FIV and HIV protein that is evolutionarily conserved between the viruses.

21. The method according to claim 20, wherein said protein is selected from the group consisting of core gag protein and envelope protein.

22. The method according to claim 15, comprising administering to said human or animal an effective amount of at least one antiretroviral drug.

23. The method according to claim 22, wherein said at least one antiretroviral drug is selected from the group consisting of nucleoside analogs, non-nucleoside inhibitor of retroviral reverse transcriptase, and protease inhibitors.

24. The method according to claim 23, wherein said nucleoside analog is selected from the group consisting of AZT and 3TC.

25. The method according to claim 23, wherein AZT and a second nucleoside analog are administered to said human or animal.

26. The method according to claim 25, wherein second nucleoside analog is 3TC.

27. The method according to claim 23, wherein AZT, a second nucleoside analog, and a protease inhibitor are administered to said human or animal.

28. The method according to claim 27, wherein second nucleoside analog is 3TC.

29. A method for treating or preventing infection by human immunodeficiency virus (HIV) in a human, said method comprising administering an FIV immunogen to said human.

30. The method according to claim 29, wherein said FIV immunogen induces an immune response against one or more subtypes of FIV.

31. The method according to claim 29, wherein said FIV immunogen is selected from the group consisting of synthetic FIV peptide, natural or recombinant FIV protein or a fragment thereof, polynucleotide comprising a sequence that encodes an FIV protein or fragment thereof, polynucleotide comprising a sequence that encodes an FIV protein or a fragment thereof and an HIV protein or a fragment thereof, inactivated or attenuated whole FIV viral isolate, FIV viral fragment, inactivated cells infected with FIV, a composition comprising FIV and HIV proteins or fragments thereof, an antibody that cross-reacts with an FIV and an HIV protein or antigen, and an antibody composition that comprises one or more antibody that is specific to an FIV protein or antigen and one or more antibody that is specific to an HIV protein or antigen.

32. The method according to claim 31, wherein said FIV immunogen comprises an epitope of an FIV and HIV protein that is evolutionarily conserved between the viruses.

33. The method according to claim 32, wherein said protein is selected from the group consisting of core gag protein and envelope protein.

34. The method according to claim 29, further comprising administering to said human an effective amount of at least one antiretroviral drug.

35. The method according to claim 34, wherein said at least one antiretroviral drug is selected from the group consisting of nucleoside analogs, non-nucleoside inhibitor of retroviral reverse transcriptase, and protease inhibitors.

36. An isolated antibody that binds to an FIV antigen and an HIV antigen.

37. The isolated antibody according to claim 36, wherein said antibody is polyclonal.

38. The isolated antibody according to claim 36, wherein said antibody is monoclonal.

39. The isolated antibody according to claim 38, wherein said monoclonal antibody is humanized.

40. A method for detecting FIV infection in a human or animal that is susceptible to infection by FIV, comprising detecting the presence of:

a) antibodies that bind to an FIV protein or peptide; or

b) nucleotide sequences of FIV.

41. The method according to claim 40, wherein detection of antibodies that bind to an FIV protein or peptide are detected by Western blot or enzyme linked immunoadsorbent assay.

42. The method according to claim 40, wherein detection of nucleotide sequences of FIV are detected by polymerase chain reaction (PCR) or reverse transcriptase-polymerase chain reaction (RT-PCR).

43. A composition comprising a polynucleotide that encodes:

a) an FIV protein, or a fragment thereof; and

b) an HIV protein, or a fragment thereof.

44. The composition according to claim 43, wherein said FIV and HIV protein are selected from the group consisting of core gag protein and envelope protein.

45. A composition comprising an FIV protein or fragment thereof and an HIV protein or fragment thereof.

46. The composition according to claim 45, wherein said FIV and HIV protein are selected from the group consisting of core gag protein and envelope protein.